

Listing of Claims

1. (Currently Amended): A composition comprising a metal powder and an aromatic binder,

wherein said metal powder comprises an elemental metal that is a getter material;

wherein said aromatic binder and said metal powder are mixed to form a feedstock for powder metallurgy forming techniques, said feedstock comprising ~~less than approximately 40 vol%~~ 29 vol% to approximately 37 vol% of said aromatic binder and no additional binders in an amount totaling greater than 10 vol%; and

wherein said aromatic binder and said metal powder do not chemically interact with one another to form property-degrading impurities in articles resulting from application of the powder metallurgy forming techniques to the feedstock.
2. (Original): The composition as recited in Claim 1, wherein said powder metallurgy forming techniques are selected from the group consisting of injection molding, extrusion, compression molding, powder rolling, blow molding, laser forming, isostatic pressing, spray forming, and combinations thereof.
3. (Canceled)
4. (Previously Presented): The composition as recited in Claim 1, wherein said aromatic binder comprises a polycyclic aromatic.
5. (Original): The composition as recited in Claim 4, wherein said polycyclic aromatic is selected from the group consisting of naphthalene, anthracene, pyrene, phenanthrenequinone, and combinations thereof.

6. (Currently Amended): ~~The composition as recited in Claim 1, wherein said aromatic binder comprises benzene and naphthalene.~~

A composition comprising a metal powder and an aromatic binder,

wherein said metal powder comprises an elemental metal that is a getter material and said aromatic binder comprises benzene and naphthalene;

wherein said aromatic binder and said metal powder are mixed to form a feedstock for powder metallurgy forming techniques, said feedstock comprising less than approximately 40 vol% of said aromatic binder and no additional binders in an amount totaling greater than 10 vol%; and

wherein said aromatic binder and said metal powder do not chemically interact with one another to form property-degrading impurities in articles resulting from application of the powder metallurgy forming techniques to the feedstock.

7. (Canceled)

8. (Canceled)

- 9 – 23. (Canceled)

24. (Original): The composition as recited in Claim 1, wherein said metal powder comprises at least approximately 45% by volume of said feedstock.

25. (Canceled)

26. (Original): The composition as recited in Claim 1, wherein said metal powder comprises approximately 54.6% to 70% by volume of said feedstock.

27. (Currently Amended): ~~The composition as recited in Claim 1, wherein said additional binder comprises a polymer.~~

A composition comprising a metal powder and an aromatic binder,

wherein said metal powder comprises an elemental metal that is a getter material;

wherein said aromatic binder and said metal powder are mixed to form a feedstock for powder metallurgy forming techniques, said feedstock comprising less than approximately 40 vol% of said aromatic binder and no greater than 10 vol% of a polymer as an additional binder; and

wherein said aromatic binder and said metal powder do not chemically interact with one another to form property-degrading impurities in articles resulting from application of the powder metallurgy forming techniques to the feedstock.

28. (Canceled)
29. (Original): The composition as recited in Claim 27, wherein said polymer comprises a thermoplastic polymer.
30. (Original): The composition as recited in Claim 29, wherein said thermoplastic polymer is selected from the group consisting of ethylene vinyl acetate, polyethylene, butadiene-based polymers, and combinations thereof.
31. (Original): The composition as recited in Claim 27, wherein said polymer comprises a thermoset polymer.
32. (Original): The composition as recited in Claim 31, wherein said thermoset polymer is selected from the group consisting of polymethylmethacrylates, epoxies, unsaturated polyesters, and combinations thereof.
33. (Original): The composition as recited in Claim 27, wherein said polymer comprises a polymer mixture of at least one thermoplastic polymer and at least one thermoset polymer.

34. (Original): The composition as recited in Claim 33, wherein said thermoplastic polymer comprises approximately 2.1% to 5.1% by volume of said feedstock.
35. (Original): The composition as recited in Claim 33, wherein said thermoset polymer comprises approximately 2.3% by volume of said feedstock.
36. (Cancelled)
37. (Original): The composition as recited in Claim 33, wherein said polymer mixture comprises approximately 4.4% by volume of said feedstock.
38. (Currently Amended): ~~The composition as recited in Claim 1, further comprising a surfactant.~~
A composition comprising a metal powder, an aromatic binder, and a surfactant, wherein said metal powder comprises an elemental metal that is a getter material;
wherein said aromatic binder, said surfactant, and said metal powder are mixed to form a feedstock for powder metallurgy forming techniques, said feedstock comprising less than approximately 40 vol% of said aromatic binder and no additional binders in an amount totaling greater than 10 vol%; and
wherein said aromatic binder and said metal powder do not chemically interact with one another to form property-degrading impurities in articles resulting from application of the powder metallurgy forming techniques to the feedstock.
39. (Original): The composition as recited in Claim 38, wherein said surfactant comprises a nonionic surfactant.
40. (Canceled)

41. (Previously Presented): A composition comprising an aromatic binder, a surfactant, and a metal powder,
- wherein said metal powder comprises an elemental metal that is a getter material; and
- wherein said aromatic binder, said surfactant, and said metal powder are mixed to form a feedstock for powder metallurgy forming techniques, said surfactant comprising up to approximately 3% of the volume of said feedstock.
42. (Previously Presented): The composition as recited in Claim 41, wherein said surfactant comprises approximately 2.3% of the volume of said feedstock.
43. (Currently Amended): ~~The composition as recited in Claim 1, further comprising a lubricant.~~
- A composition comprising a metal powder, an aromatic binder, and a lubricant,
- wherein said metal powder comprises an elemental metal that is a getter material;
- wherein said aromatic binder, said lubricant, and said metal powder are mixed to form a feedstock for powder metallurgy forming techniques, said feedstock comprising less than approximately 40 vol% of said aromatic binder and no additional binders in an amount totaling greater than 10 vol%; and
- wherein said aromatic binder and said metal powder do not chemically interact with one another to form property-degrading impurities in articles resulting from application of the powder metallurgy forming techniques to the feedstock.

44. (Original): The composition as recited in Claim 43, wherein said lubricant is selected from the group consisting of organic fatty acids, metallic salts, solid waxes and combinations thereof.
45. (Original): The composition as recited in Claim 44, wherein said organic fatty acid is selected from the group comprising stearic acid, branched versions of stearic acid, substituted versions of stearic acid, and combinations thereof.
46. (Original): The composition as recited in Claim 44, wherein said metallic salts are selected from the group consisting of sodium stearate, calcium stearate, and combinations thereof.
47. (Original): The composition as recited in Claim 44, wherein said solid waxes are selected from the group consisting of microcrystalline waxes, paraffin waxes, carnuba wax, and combinations thereof.
48. (Original): The composition as recited in Claim 43, wherein said lubricant comprises up to approximately 3% of the volume of said feedstock.
49. (Original): The composition as recited in Claim 43, wherein said lubricant comprises approximately 1.5% of the volume of said feedstock.
50. (Currently Amended): ~~The composition as recited in Claim 1, further comprising at least one additional metal powder.~~

A composition comprising a first metal powder, an aromatic binder, and at least one additional metal powder,

wherein said first metal powder comprises an elemental metal that is a getter material;

wherein said aromatic binder, said first metal powder, and said at least one additional metal powder are mixed to form a feedstock for powder metallurgy

forming techniques, said feedstock comprising less than approximately 40 vol% of said aromatic binder and no additional binders in an amount totaling greater than 10 vol%; and

wherein said aromatic binder and said first metal powder do not chemically interact with one another to form property-degrading impurities in articles resulting from application of the powder metallurgy forming techniques to the feedstock.

51. (Original): The composition as recited in Claim 50, wherein said additional metal powder comprises a sintering aid.

52. (Original): The composition as recited in Claim 51, wherein said sintering aid comprises silver.

53. (Original): The composition as recited in Claim 50, wherein said additional metal powder comprises an alloying powder.

54 – 151. (Canceled)

152. (Previously Presented): A composition comprising a metal powder, an aromatic binder, and an additional metal powder comprising a sintering aid,

wherein said metal powder comprises an elemental metal that is a getter material and said sintering aid comprises silver; and

wherein said aromatic binder and said metal powder are mixed to form a feedstock for powder metallurgy forming techniques, said feedstock comprising less than approximately 40 vol% of said aromatic binder and no additional binders in an amount totaling greater than 10 vol%.

153. (New): The composition as recited in Claim 6, wherein said aromatic binder comprises approximately 29% to 37% by volume of said feedstock.

154. (New): The composition as recited in Claim 6, wherein said metal powder comprises at least approximately 45% by volume of said feedstock.
155. (New): The composition as recited in Claim 6, wherein said metal powder comprises approximately 45% to 95% by volume of said feedstock.
156. (New): The composition as recited in Claim 6, wherein said metal powder comprises approximately 54.6% to 70% by volume of said feedstock.